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ABSTRACT

Bridging the gap between the research resources and field personnel becomes an increasingly important problem. This study investigated the impact of the Research Utilization Project (RUP) on public elementary schools in the District of Columbia. In the 16 schools selected by a multistage stratified sampling method, the total number of information searches and the degree of principals' satisfaction with RUP products and services were evaluated. The results showed: 1) the number of searches initiated in the target schools was greater than number of searches initiated in a comparable number of non-target schools; 2) the number of searches increased after the RUP had entered the target schools; 3) all principals gave the RUP high rating for those who had used it, but the principals' rating of the RUP in their schools overall was considerably lower; 4) the principals held favorable attitudes toward the RUP and its expansion; and 5) there was no significant relationship between principals' attitudes and number of searches conducted for their schools. The favorable results suggest that the extension agent concept should serve as a model for the development of a system-wide information dissemination system. (CH)

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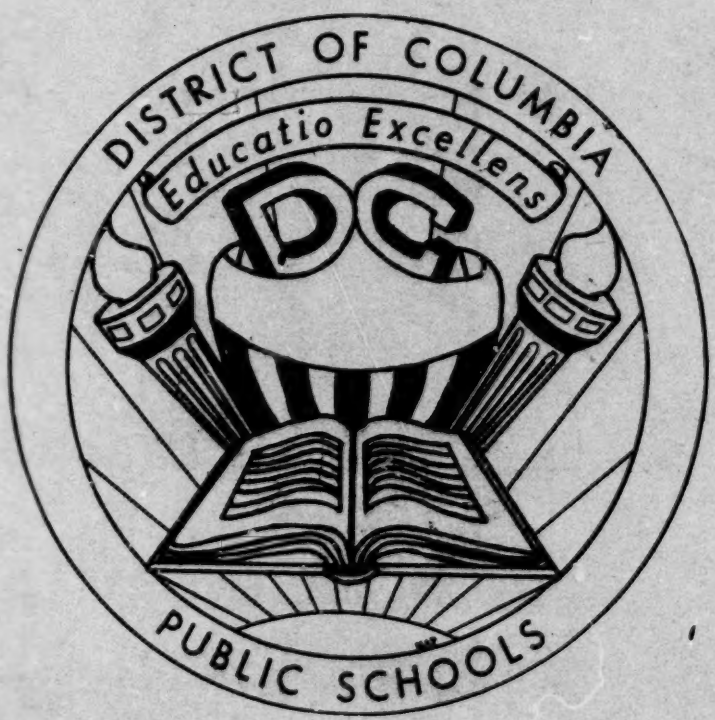
RESEARCH UTILIZATION PROJECT

ASPECTS OF ITS IMPACT IN THE PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA



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AN ANALYSIS OF THE IMPACT OF THE RESEARCH UTILIZATION PROJECT ON PRINCIPALS' ATTITUDES AND ON THE USE OF INFORMATION SERVICES BY TEACHERS AND OTHER FIELD PERSONNEL IN 16 TARGET ELEMENTARY SCHOOLS OF THE DISTRICT OF COLUMBIA

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Table of Contents

	Page
List of Figure and Tables	v
Abstract	vii
Introduction	1
Statement of the Problem	4
Review of the Literature	5
Hypotheses	9
Hypothesis One	9
Hypothesis Two	9
Hypothesis Three	10
Hypothesis Four	10
Hypothesis Five	10
Research Design	10
Sample	10
Data Gathering Instruments	11
Research Request Form	11
Principals' Attitude Rating Scale	11
Scoring	12
Reliability	12
Validity	12
Procedures	12
Results	14
Amount of Use	14
Principals' Attitudes Toward the Project	17
Principals' Opinions of Teachers' and Librarians' Use	26
Discussion	34
Conclusions	36
Recommendations	37
Bibliography	38
Appendices	40
A. Information Sheet on Research Information Center	41
B. Information Sheet on Research Utilization Project	43
C. List of RUP Target Schools	44
D. Research Request Form	45
E. Principals' Attitude Rating Scale	47
F. Letter to Principals	50
G. Code Book	51
H. Pert Chart	56

List of Figure and Tables

		Page
Figure 1	The Flow of Educational Knowledge	3
Table 1	Comparison of Number of Searches Conducted for the 16 Target and 16 Non-Target Schools Between January 1 and June 30, 1972	14
Table 2	Month-by-Month Comparison of the Total Number of Searches Conducted by the RIC Staff Between January 1 and June 30, 1971, with the Total Number of Searches Conducted Between January 1 and June 30, 1972	15
Table 3	Comparison of Number of Searches Conducted for the RUP Target Schools Between March 1 and June 30, 1971, with Searches Conducted Between March 1 and June 30, 1972	16
Table 4	Principals' Rating of RUP Program for Users and in School Overall	17
Table 5	Principals' Answers to Questions Revealing Their Attitudes Toward the Research Utilization Project (Two-Choice Questions)	18
Table 6	Principals' Answers to Questions Revealing Their Attitudes Toward the Research Utilization Project (Four-Choice Questions)	20
Table 7	Two-Choice Question Means, Four-Choice Question Means, and Aggregate Means of Questions Relating to Principals' Attitudes Toward the Research Utilization Project	22
Table 8	Frequency Distribution of Aggregate Means Based on Two-Choice and Four-Choice Questions Relating to Principals' Attitudes Toward RUP	24
Table 9	Principals' Use of Services and Materials Provided by the Research Utilization Project ...	25

List of Figure and Tables (Continued)

		Page
Table 10	Frequency of Principals' Use of RUP Services ...	26
Table 11	Principals' Perceptions of Teachers' and Librarians' Use of the System	27
Table 12	Principals' Perceptions of Percent of Staff Using Project Services	28
Table 13	Principals' Perceptions of Teachers' and Librarians' Feelings About the Research Utilization Project	29
Table 14	Number of New Projects, Programs, or Teaching Techniques Resulting from RUP	30
Table 15	Matrix Showing Correlation Between Total Number of Searches and Principals' Attitude Score Based on Variables 2, 3, 8, 11, 12, 13, 14, 17, and 18 of Principals' Attitude Rating Scale	32

AN ANALYSIS OF THE IMPACT OF THE RESEARCH UTILIZATION PROJECT ON PRINCIPALS' ATTITUDES AND ON THE USE OF INFORMATION SERVICES BY TEACHERS AND OTHER FIELD PERSONNEL IN 16 TARGET ELEMENTARY SCHOOLS OF THE DISTRICT OF COLUMBIA

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Abstract

The purpose of this study was to evaluate the impact of the Research Utilization Project on sixteen public elementary schools. A part of the RUP was using educational extension agents to make principals, librarians, and teachers more aware of research resources in the Research Information Center of the Washington schools.

It was hypothesized that the Project would positively influence the number of research requests and principals' attitudes. Results, based on a sample of sixteen principals whose attitudes were assessed by a specially constructed attitude rating scale. supported the hypotheses and demonstrated the favorable impact of the project.

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Introduction

For the last two years, among the primary program objectives set forth by the Superintendent of Schools in "The Superintendent's Operational Tasks 1971-1972," the goal of raising the level of academic achievement of students in the areas of reading and mathematics has headed the list. But even before that, a modified version of a plan presented by Kenneth Clark, called "A Design for the Attainment of High Academic Achievement for the Students of the Public Elementary and Junior High Schools of Washington, D. C.," popularly known as the Clark Plan, had been implemented in the schools.

The Research Information Center (RIC), (see Appendix A), through the Department of Research of the Office of Planning, Research and Evaluation of the D. C. Public Schools, prepared and submitted a proposal to the Office of Education in April 1971 for the establishment of a Research Utilization Project (RUP) (see Appendix B). The U. S. Office of Education awarded the contract to the D. C. Public Schools, and funding began in June 1971 for a period of 18 months.

The selection of the 16 target schools was determined by the fact that they were a part of a program evaluation system. They had been selected for inclusion by a multistage stratified sampling method based on enrollment and geographic areas. Also it was hoped that the existence of additional data on these schools might prove to be of benefit for any future correlational purposes.

The project director, the project coordinator, and the assistant project coordinator were already on the staff of the Office of Planning, Research and Evaluation when the project began. A freeze on the filling of vacant positions and the general fiscal crisis experienced by the D. C. Public Schools at that time, however, caused a delay in staffing the rest of the RUP positions, so that two of the three linkers did not join the project until January 10, 1972, while the third linker began May 1, 1972.

The project director of the Research Utilization Project was the Assistant Superintendent for Research and Evaluation, Departments of Research and Evaluation, Office of Planning, Research and Evaluation, D. C. Public Schools. She had final administrative authority over all aspects of the project, and a portion of her time was committed to the project.

The project coordinator of the RUP was the coordinator of the Research Information Center and reported directly to the project director. Fifty percent of his time was committed to the project. His duties included the day-to-day administration and supervision of the project staff. Under the general supervision of the project director, the coordinator was responsible for the project, including coordination with other departments and target schools, training, purchasing, evaluation, project reporting, and so forth.

The assistant project coordinator was directly responsible to the project coordinator and assisted him in the various day-to-day activities of the project. She was also responsible for collecting and tabulating data for monthly and other reporting that were required for project evaluation.

Linkers are resource persons who disseminate research information to schools. On-the-job training for the first two linkers began January 10, 1972 and extended over a period of two weeks. The third linker began her training May 1, 1972. The librarians of the target schools, who were to play an important role in the Project, were trained February 2 and 3, 1972. Figure 1 (Farr, 1969) schematically depicts the role of the linkers in the flow of educational knowledge, and the role of the gatekeeper, which in the Research Utilization Project was assigned to the librarians.

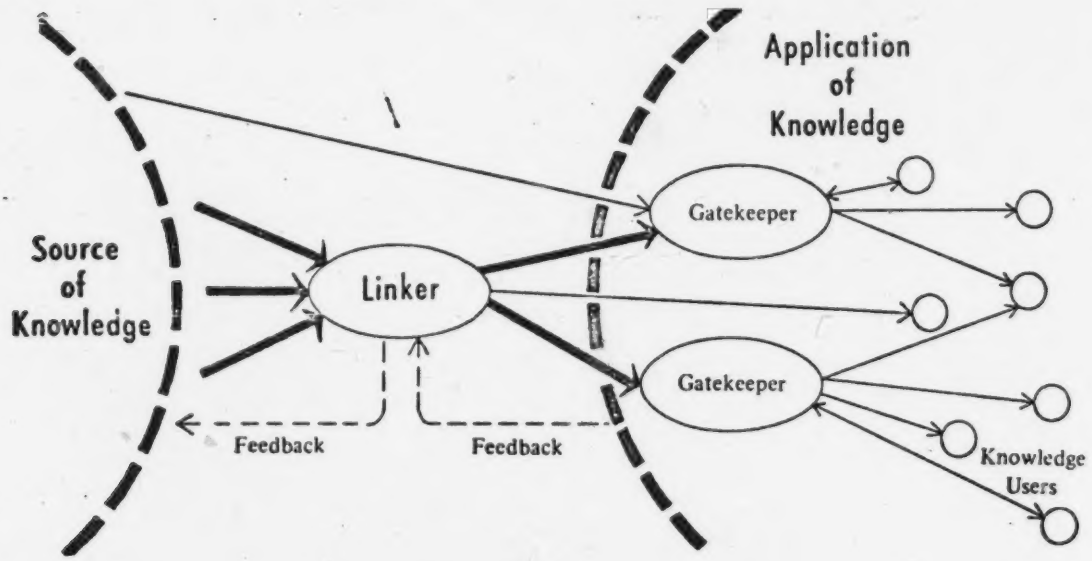

Fig. 1
The Flow of Educational Knowledge

The main purpose of the Research Utilization Project was to translate research into educational practice at the instructional level in the D. C. Public Schools, with the initial emphasis in the area of reading. To effect the link between the resources of the RIC and the

needs of key field personnel--teachers, principals, librarians, and reading specialists--liaison researchers (the linkers previously mentioned) were used to acquaint target personnel with research findings and to provide information to classroom teachers for initiating and developing programs.

Statement of the Problem

The purpose of this evaluation was to assess the effect of selected aspects of the Research Utilization Project on the 16 target schools which were part of the pilot project.

This study has the following objectives:

1. To determine how information supplied through this project or by project staff was utilized by determining if any projects were initiated or developed as a result of the RUP
2. To assess user satisfaction with RUP products and services
3. To ascertain the number of searches that were conducted since January 1972 due to the RUP target schools
4. To obtain the reactions of target school principals to the RUP
5. To ascertain what use was made of material placed in school libraries by the Research Utilization Project and of what value this material was.

Central to the RUP was the concept of the previously mentioned linker, also known as "liaison researcher," "knowledge linker" (Farr, 1969), "county agent" (Benson, 1969), "change agent" (Goodson and Hammes, 1968), and "information specialist" (Paisley, 1968), whose function it was to provide a link between research sources and the practitioner in

the field, to identify local educational problems and needs, refer them to the ERIC Office for an information search, transmit findings to the teachers, and initiate new research efforts when information needed for problems could not be located.

Review of the Literature

The science of knowledge utilization is a new field, which began emerging in the 1960's (Havelock, 1969).

The concept of the linker is an outgrowth of the agricultural extension agent concept, and some of the same principles apply to both concepts (Farr, 1969). Akinbode (1969) studied the degree of communication between farmers and the agricultural extension service and found that extension agents may influence the nature of contacts by the emphasis they place on particular methods.

In the area of job satisfaction and performance, Erwin (1969) studied the effects that relate to the degree of involvement of county staff members by the county extension chairman in decision making. He found perceived involvement associated with both the level of job satisfaction and the performance of county staff members.

In the field of education, change takes place very slowly. Rhodes (1969) spoke of the reluctance of educators to engage in innovations, not because innovations lack validity, but because they may require of the educational practitioner changes in role, scheduling, space allocations, etc. Today's problem, according to Lavin (1971), is exemplified not by lack of available knowledge but by lack of utilization of educational research, which is caused by the gap existing in the system of knowledge transfer.

Rhodes (1969) described the Educational System for the Seventies (ES '70) demonstration network which was concerned with creating a climate that encouraged innovation and experimentation. The ES '70 Project dealt with the problem of how to facilitate an effective process of institutional change which would start with a school's physical and personnel resources and would permit it to evolve more relevant and appropriate means to support learning. In the project, E. F. Shelley and Company, Inc., a multidiscipline organization in educational management and information systems, was assigned the task of linking agent and was responsible for viewing each activity in reference to its effect on the whole. The company was charged with collecting and analyzing data and relating school needs to research and research-funding agencies. The company also disseminated research information to the schools and could develop new means of facilitating the exchange of information necessary for decision making.

To ensure that most effective use is made of research, Lyons (1966) believed that research personnel should be available to help in the implementation process.

As described by Farr (1969), the functions of a linking institution include:

1. Anticipating areas of concern among members of the target audience

2. Turning to resources and gathering information available on the subject

3. Selecting the most salient elements

4. Summarizing

5. Drawing conclusions

6. Presenting review of literature in an easily readible and digestible form

7. Effectively disseminating the information to the people who need it

Duties of field agents were seen by Louis (1970) as:

1. Helping educators identify educational problems

2. Preparing educators' requests for information

3. Helping educators develop approaches and plans in problem-solving or innovation

4. Assisting educators in utilization of data

5. Helping educators to plan and to implement research information

Havelock (1970) included two additional areas of concern in which the change agent should build a collaborative helping relationship with his client and try to maintain this relationship. As a last step he listed the importance of generating and maintaining a problem-solving, self-renewing capacity.

The Office of Education pilot tested the extension agent concept in South Carolina, Utah, and Oregon in 1970, in order to develop, test, and demonstrate ways in which state educational agencies could furnish information to local educators. Sieber's evaluation (1972) of the Pilot State Dissemination Program found that "field agents" were reaching educational personnel closer to the classroom who in their training were less likely to have been exposed to educational research or innovations.

"Field agents" in these three states were found to render better assistance than others (e.g. a large proportion of curriculum and instruction experts). Clients of field agents implemented new practices as a result of information or assistance they received; they had a higher utilization rate than non-target clients. The conclusion reached in this study was that the personal assistance of the "field agent" accounted for the differential rate of use, and that the field agent acted as a catalyst to the client.

In addition to the grant for the extension agent concept awarded to the D. C. Public Schools, eight other research centers were funded for the fiscal year 1972.

Since the Research Information Center is the State ERIC Office in the District of Columbia, the research information resources and capabilities to support a project like the RUP were already in existence.

In evaluating a program as extensive as this there are certain limitations that should be kept in mind. Goodson (1968) listed the following:

(1) Inability to control variables to the extent that effectiveness exclusively of the change agents can be measured;

(2) Attempting to measure an ongoing process instead of an end product;

(3) Lower validity and reliability of attitudinal and behavioral types of surveys as compared to more objective data.

Havelock (1970) commented that when a project like this is evaluated, many measurable benefits might not be generated for one or two years, even though the program worked perfectly. An earlier evaluation might reveal "no effect" when a real effect was still emerging.

Godson (1968) offered the following criteria for an evaluation of this type:

1. Positive changes in individual behavior and attitudes toward innovation and change;
2. Developing a climate conducive to innovation and change;
3. Positive change in innovativeness of a school system; and
4. The system's ability to be self-starting or self-renewing.

Hypotheses

Hypothesis One

Since it is theorized that a helping and interprofessional relationship increases participation, it is expected that the number of searches initiated in the target schools (in the RUP Project) between January 1, 1972, and June 30, 1972, is greater than the number of searches initiated in a comparable number of non-target schools during that same time period. The target schools had already been previously selected for participation in the pilot stage of the Evaluation System. The selection was by means of a multistage stratified sampling method based on enrollment and geography. Because of the availability of data, it was decided to have these same schools become the RUP target schools (see Appendix C). Non-target schools were similarly selected by a multistage stratified sampling method based on enrollment and geography.

Hypothesis Two

It is expected that there will be an increase in the total number of searches conducted between January 1, 1972 (the beginning of the RUP Project), and June 30, 1972, over the number of searches conducted between January 1, 1971, and June 30, 1971.

Hypothesis Three

It is expected that the number of searches conducted for the target schools between March 1, 1972, and June 30, 1972, is more than the number of searches conducted for these schools between March 1, 1971, and June 30, 1971.

Hypothesis Four

It was theorized that general satisfaction is related to interpersonal involvement and is increased by a helping and interprofessional relationship. Therefore, it is hypothesized that principals at the RUP target schools have positive attitudes toward the RUP Project.

Hypothesis Five

It is hypothesized that there is a direct relationship between the amount of research information and services supplied to RUP target schools and RUP principals' attitudes toward the Project.

Research Design

Sample

The sample consisted of the sixteen principals from the RUP target schools. Fifteen of the principals were women; fourteen of the principals were black, while two of them were white. When interviewed twelve of the sixteen principals were active, two were retired, one had left the school system, and one was serving for the principal. Information on the sex, race, and status of the sixteen randomly selected non-target school principals was not available.

Data Gathering Instruments

Research Request Form

This form (see Appendix D), which was used to gather data on the clients of the Research Information Center, consists of five sections and collects data pertaining to the client's position, how contact was made, purpose of the information request, statement of the research problem, dates when the request was made and filled, resources used, time required, and search results. The client could complete his part of the form in five minutes. A simple tally of these forms yielded the number of searches.

Principals' Attitude Rating Scale

The numerical rating scale (see Appendix E), which was constructed especially for the RUP Project, consists of 18 items pertaining to the Research Utilization Project and to principals' opinions concerning this project. It was designed to obtain answers to the following:

1. Attitude of respondents toward the RUP Project
2. Attitude of respondents toward the "linker"
3. Respondents' opinion of frequency of searches conducted for the school and for the principals personally
4. Use made of searches conducted, specifically if they have resulted in new programs or new teaching techniques
5. Principals' opinion of librarians' and teachers' attitudes toward the project
6. Use of ERIC materials placed in RUP schools.

The questions were arranged in either increasing or decreasing order of favorableness.

Scoring. Twelve of the eighteen items on the Principals' Attitude Rating Scale were scored from one to four. The response that was most favorable to the Research Utilization Project was assigned a value of four, the next most favorable, a three, etc., so that the least favorable response was assigned a value of one. Six of the items were scored either one or two, the latter being the more favorable response, and one being socred as less favorable. The individual item scores were summed to obtain a total score. If all questions were answered, the possible range of scores was from a low of 18 to a high of 60.

Reliability. The reliability of this rating scale was not tested.

Validity. This rating scale has face validity.

Procedures

Data for determining the number of searches initiated in both the target and non-target schools between January 1, 1972, and June 30, 1972, were obtained by tallying the number of search request forms for those schools for that time period. Similarly, data for determining the number of searches initiated between January 1, 1971, and June 30, 1971, were obtained by tallying the number of search request forms for that time period. The same procedure was followed for determining the number of searches conducted between March 1, 1971, and June 30, 1971, and for those conducted between March 1, 1972, and June 30, 1972.

RUP principals' attitudes were measured by means of the Principals' Attitude Rating Scale. This instrument was pretested on the two principals who had retired, with the instrument being administered to them at their homes. On the basis of the experience gained from these two trials,

the Principals' Attitude Rating Scale was revised, and for the sake of ease in scoring, it was made completely objective.

The Principals' Attitude Rating Scale was, in most cases, brought to the principal by the project coordinator and his assistant, who had made previous appointments to see the principal (see Appendix F). Each respondent was asked to choose from among either two or four alternative choices. All but three of the principals completed the rating scale in the presence of the project coordinator and his assistant; these three principals mailed the completed questionnaire back. All questionnaires were completed between November 17, 1972, and January 10, 1973. The questionnaires were then scored according to the previously constructed scoring key. The scores were then summed and entered on Fortran Coding Forms, according to the preconstructed Coding Manual (see Appendix G).

Results

Amount of Use

In Table 1 are the monthly number of searches conducted between January 1 and June 30, 1972. The total number of searches for the target schools (168) is 56 times the number of searches conducted for the non-target schools (3). This finding supports the first hypothesis, namely, that the number of searches initiated in the target schools is greater than the number of searches conducted for non-target schools during this time period.

Table 1

Comparison of Number of Searches
Conducted for the 16 Target and 16 Non-Target Schools
Between January 1, 1972 and June 30, 1972

Month	Number of Searches	
	Target Schools	Non-Target Schools
January	5	0
February	33	0
March	42	0
April	47	0
May	15	2
June	26	1
Total Jan. - June, 1972	168	3

The number of searches conducted for the six months, January through June, 1971, was compared with the number of searches conducted for the six comparable months of 1972 (see Table 2). Monthly totals for 1972 were larger than monthly totals for 1971, with the exception of the month of June. An obtained chi-square of 25.4255 with 5 degrees of freedom is significant at the .01 level. This finding supports the second hypothesis.

Table 2

Month-by-Month Comparison of the Total Number of Searches Conducted by the RIC Staff Between January 1 and June 30, 1971, With the Total Number of Searches Conducted Between January 1 and June 30, 1972

Month	Number of Searches	
	1971	1972
January	97	118
February	73	139
March	116	163
April	76	129
May	71	111
June	125	100
Total for 6 Months	558	760

x^2 Chi-square = 25.4255 with 5 degrees of freedom

A comparison of the number of searches conducted for the RUP target schools for two time periods--March 1 to June 30, 1971, and March 1 to June 30, 1972--is depicted in Table 3. The total number of searches conducted for RUP target schools in 1971 is only 1, with May being the only month during which a search was conducted. Monthly totals for 1972 range from a low of 16 for the month of May to a high of 47 for the month of April. The total number of searches conducted for RUP target schools in 1972 was 128, a substantial increase over 1971. This finding supports the third hypothesis.

Table 3

Comparison of Number of Searches Conducted
for the RUP Target Schools Between March 1 and June 30, 1971,
With Searches Conducted Between March 1 and June 30, 1972

Year	Searches for all Target Schools				
	March	April	May	June	Total
1971	0	0	1	0	1
1972	42	47	15	24	128

Principals' Attitudes Toward The Project

RUP target school principals' attitudes toward the Project were elicited in questions 2, 3, 8, 11, 12, 13, 14, 17, and 18 of the Principals' Attitude Rating Scale. Their rating of the program for those who used it is compared with their rating of the program in their school overall in Table 4. All sixteen principals gave the project a very high or high rating for users of the services, whereas only one principal gave the program the highest rating in her school overall. Seven principals gave the program a high rating in their schools overall, while seven others felt it was not effective overall.

Table 4

Principals' Rating of RUP
Program for Users and
in School Overall
(N=16)

Rating of Program	Level of Rating							
	Highest Rating		High Rating		Low Rating		No Response	
	N	%	N	%	N	%	N	%
For Users	8	50.0	8	50.0	0	0	0	0
In School Overall	1	6.3	7	43.8	7	43.8	1	6.3

Principals' feelings regarding the expansion of the project were explored in two questions, one relating to expansion of the program within their own school and one relating to expansion of the program to the rest of the school system (see Table 5). Twelve of the sixteen principals favored expansion of the program within their schools, while fourteen out of sixteen were in favor of providing the RUP services to the rest of the school system. All principals who had voted in favor of expanding the RUP program within their own schools also voted for letting other schools have these services too.

Table 5

Principals' Answers to Questions
Revealing Their Attitudes
Toward the Research Utilization Project
(Two-Choice Questions)
(N=16)

Question No.	Variable	Type of Response					
		Favorable (Yes)		Unfavorable (No)		No Response	
		N	%	N	%	N	%
2	Liking of Program	15	93.8	0	0	1	6.3
13	Expansion of Program Within School	12	75.0	4	25.0	0	0
14	Expansion of Program to Rest of School System	14	87.5	1	6.3	1	6.3

In reply to the question if principals liked the program, it will be seen in Table 5 that fifteen out of sixteen principals, or 93.8%, liked it. No unfavorable responses were given, but one principal failed to answer this question.

A composite of the six four-choice questions demonstrating the principals' attitudes toward the Research Utilization Project is shown in Table 6. No unfavorable responses were given by any principal to any of the six questions. Except for one question, which concerned the rating of the program in the school overall, at least twelve out of sixteen principals' responses (or 75%) fell into the highly favorable or favorable category. All sixteen principals gave a highly favorable or a favorable response to the question relating to the helpfulness of the program to users. Principals were about evenly divided on the question relating to the effectiveness of the program in the school overall.

Table 6

Principals' Answers to Questions Revealing Their Attitudes Toward the Research Utilization Project (Four-Choice Questions) (N=16)

Question Number	Variable	Degree of Favorableness of Response										Total
		Highly Favorable		Favorable		Neutral or Slightly Unfavorable		Unfavorable		No Response		
		N	%	N	%	N	%	N	%	N	%	
3	Helpfulness of Program to Principals	5	31.3	9	56.3	1	6.3	0	0	1	6.3	100.2
8	Satisfaction With Extension Agent	4	25.0	10	62.5	1	6.3	0	0	1	6.3	100.1
11	Helpfulness of Program to Users	8	50.0	8	50.0	0	0	0	0	0	0	100.0
12	Rating of Program in School Overall	1	6.3	7	43.8	7	43.8	0	0	1	6.3	100.2
17	Value of Material to Principals	3	18.8	9	56.3	0	0	0	0	4	25.0	100.1
18	Recommendation of Program to Others	6	37.5	7	43.8	2	12.5	0	0	1	6.3	100.1

Table 7 shows how each principal answered the two-choice questions and the four-choice questions related specifically to principals' attitudes toward the Research Utilization Project. Following each group of questions--that is, following the group of two-choice questions and following the group of four-choice questions--is a column that shows the mean for that particular set of questions. The last column represents the aggregate mean of the two- and four-choice question means, which was obtained by adding these two means.

Table 7

Two-Choice Question Means, Four-Choice Question Means, and Aggregate Means of Questions Relating to Principals' Attitudes Toward the Research Utilization Project
(N=9)

Principal	NUMBER OF			Two-Choice Question Mean	NUMBER OF					Four-Choice Question Mean	Aggregate Mean
	Yes (2) Answers	No (1) Answers	No Response		Highly Favorable (4) Responses	Favorable (3) Responses	Neutral or Slightly Unfavorable (2) Responses	Unfavorable (1) Responses	No Response		
1	2	1	0	1.67	0	5	1	0	0	2.83	4.50
2	3	0	0	2.00	0	6	0	0	0	3.00	5.00
3	3	0	0	2.00	0	4	1	0	1	2.80	4.80
4	3	0	0	2.00	5	0	1	0	0	3.67	5.67
5	3	0	0	2.00	6	0	0	0	0	4.00	6.00
6	3	0	0	2.00	1	5	0	0	0	3.17	5.17
7	3	0	0	2.00	0	2	3	0	1	2.40	4:40
8	3	0	0	2.00	2	3	1	0	0	3.17	5.17
9	3	0	0	2.00	4	1	0	0	1	3.80	5.80
10	0	2	1	1.00	1	0	2	0	3	2.67	3.67
11	2	1	0	1.67	0	6	0	0	0	3.00	4.67
12	3	0	0	2.00	4	1	0	0	1	3.80	5.80
13	1	1	1	1.50	0	6	0	0	0	3.00	4.50
14	3	0	0	2.00	2	3	0	0	1	3.40	5.40
15	3	0	0	2.00	1	4	1	0	0	3.00	5.00
16	3	0	0	2.00	1	4	1	0	0	3.00	5.00

The lowest possible aggregate mean is 2, and the highest possible combined, or aggregate, mean is 6, placing the midpoint of the possible range 2-6 at 4.

As can be seen more easily in Table 8, which depicts the frequency distribution of the aggregate means, both the mode and the median of the aggregate means are 5.00. The midpoint of the possible range is 4. The assumption is that any score lying above 4.00 denotes a favorable attitude, while scores falling below 4.00 would indicate unfavorable attitudes. Table 8 illustrates that fifteen out of sixteen scores, or 94%, fell above 4.00 on the aggregate mean, while only one score fell below that point. The median and mode of the aggregate mean lie above the midpoint of the range, and ten out of sixteen cases fall at or above the median, with only six cases falling below it. These data support the fourth hypothesis, that RUP principals have positive attitudes toward the RUP project, which was the case with fifteen out of sixteen principals.

Table 8

Frequency Distribution of Aggregate Means
Based on Two-Choice and Four-Choice Questions
Relating to Principals' Attitudes Toward RUP

Aggregate Mean	f
6.00	1
5.80	2
5.67	1
5.40	1
5.17	2
5.00	3
4.80	1
4.67	1
4.50	2
4.40	1
3.67	1

Median = 5.00
Mode = 5.00

Information concerning the principals' use of RUP services and materials is presented in Table 9 while data in Table 10 display the frequency of such use. There was a slightly greater use by principals of RUP services than of RIE, CIJE or PREP materials (81.3% vs. 68.8%), as illustrated in Table 9.

Table 9

Principals' Use of Services
and Materials Provided by the
Research Utilization Project

(N=16)

Category of Use	Amount of Use	
	Number of Users	Percent
Services	13	81.3
Materials (RIE, CIJE, PREP)	11	68.8

As was already evident in Table 9, thirteen out of sixteen principals used RUP services at some time. This statistic is verified and refined in Table 10. While three principals, as is indicated in both Tables 9 and 10, never used RUP services, eleven principals, or 68.8%, used the services one to five times. One principal used the services six to ten times, and one principal indicated she had used RUP services more than ten times (see Table 10).

Table 10

Frequency of Principals' Use of
RUP Services

(N=16)

Categories of Frequency of Use	Number of Principals	Percent of Principals
Never	3	18.8
1 - 5 times	11	68.8
6 - 10 times	1	6.3
More than 10 times	1	6.3

Principals' Opinions of Teachers' and Librarians' Use

Principals of the RUP target schools were also questioned regarding their perception of their teachers' and librarians' use of the RUP, as well as their opinion regarding the percent of their staff using project services. Although data are missing on three librarians, whereas data on teachers are complete, a glance at Table 11 shows that the remaining 13 librarians used the RUP either a lot, as was the case with four librarians (25%), or some, as was the case with nine librarians (56.3%). Teacher use of the RUP services was put by nine principals (56.3%) into the "some" category and by seven principals (43.8%) into the "very little" category. (See Table 11.)

Table 11

Principals' Perceptions of
Teachers' and Librarians' Use
of the System

(N=16)

Target Group Evaluated	Frequency and Percent of Use							
	A lot	%	Some	%	Very Little	%	Missing Data	%
Teachers	-	-	9	56.3	7	43.8	-	-
Librarians	4	25.0	9	56.3	-	-	3	18.8

As indicated in Table 12, thirteen out of sixteen principals estimated that up to 25% of their staff availed themselves of RUP services, while two principals thought that RUP use by their staff ranged between 26 and 50 percent.

Table 12

Principals' Perceptions of
Percent of Staff Using Project Services
(N=16)

Extent of Use	Staff Using Services	
	N	Percent
Up to 25%	13	81.3
26-50%	2	12.5
No response	1	6.3

Principals' perceptions of the feelings of teachers and librarians toward the Research Utilization Project were explored in two questions of the Principals' Attitude Rating Scale, and the results are presented in Table 15. Principals perceived no unfavorable attitudes toward the project on the part of either teachers or librarians, while very favorable attitudes were perceived for eight librarians (50%) and for the teaching staff of three principals (18.8% of principals). When both very favorable and favorable attitudes are combined, twelve principals (75%) put their teaching staff into either of these categories; thirteen principals (81.3%) placed their librarians into either of these favorable categories.

Table 13

Principals' Perceptions of
Teachers' and Librarians' Feelings
About the Research Utilization Project

(N=16)

Principals' Opinions Regarding Staff Attitude Toward RUP	Degree of Favorableness									
	Very Favorable	%	Favorable	%	Neutral or Slightly Favorable	%	Unfavorable	%	No Response	%
Teachers' Feelings	3	18.8	9	56.3	3	18.8	0	-	1	6.3
Librarians' Reactions	8	50.0	5	31.3	0	-	0	-	3	18.8

In order to determine how many new projects, programs, or teaching techniques were initiated as a result of the Research Utilization Project, principals were asked to respond by selecting from among four categories. The categories and the number and percent of principals who chose each category are presented in Table 14.

Table 14

Number of New Projects, Programs,
or Teaching Techniques Resulting from RUP

(N=16)

Response Category for Number of Programs	Number and Percent of Principals Responding	
	Number	Percent
None at all	2	12.5
A few (2 or 3)	10	62.5
Quite a few (4-6)	3	18.8
No response	1	6.3

As can be seen in this table, the majority of the principals (62.5%) believed that the Research Utilization Project was responsible for two or three projects. Two principals (12.5%) thought that no new projects were traceable to RUP, whereas three principals (18.8%) attributed four to six new projects to the impact of the program.

For the purpose of ascertaining if any correlation exists between principals' attitudes and the number of searches conducted for the target schools, both Pearson Product-Moment (r) and Spearman Rank-Order (rho) correlations were run. The Pearson Product-Moment correlation between the Principals' Attitude Rating Scale and the number of searches conducted for the target school was 0. The Spearman Rank-Order correlation for

the same data was .11 at the .66 level of confidence. No relationship was found in either one of these tests. A matrix detailing the various Spearman correlations between total number of searches conducted for the target schools between January 1 and June 30, 1972, and the nine attitudinal items of the Principals' Attitude Rating Scale is shown in Table 15. The figures significant at the .05 level are starred, which would be considered significant in this study.

Table 15

Matrix Showing Correlation Between
Total Number of Searches and Principals' Attitude
Score Based on Variables 2, 3, 8, 11, 12, 13, 14, 17, and 18
of Principals' Attitude Rating Scale

Variable Numbers	Variable Numbers									
	26	2	3	8	11	12	13	14	17	18
26	-	-.20	-.25	-.21	.33	-.45*	-.13	.04	-.23	.14
2		-	.47*	.49*	-.26	.21	.45*	.63*	.38	.36
3			-	.81*	.30	.05	.42	.40	.60*	.69*
8				-	.42*	.01	.38	.38	.34	.56*
11					-	0	.29	.02	-.11	.47*
12						-	0	-.02	.01	.34
13							-	.65*	.16	.35
14								-	.23	.32
17									-	.23
18										-

* Significant at .05 level or better.

Pearson Product-Moment (r) Sum of Variables 2, 3, 8, 11, 12, 13, 14, 17, 18 with Variable 26 = 0

Spearman Correlation Coefficient (rho) Sum of Variables 2, 3, 8, 11, 12, 13, 14, 17, 18 with Variable 26 = .11 at .66 Level of Confidence

This table of the relationship between attitudes and number of searches shows that only one item, Number 12, correlates at a .05 level of significance with number of searches. This item questions the principals about their rating of the program in the school overall, and the correlation, though significant, is negative. This table also shows other correlations among the various items of the test that are significant at the .05 level or better. For instance, there is a correlation between satisfaction with the services of the extension agent and liking of the program and between satisfaction with the services of the extension agent and helpfulness of the program.

The fifth hypothesis, that there is a direct relationship between the amount of research information and services supplied to RUP target schools and RUP principals' attitudes toward the Project, was not supported.

Discussion

One of the objectives of this evaluation was to assess the impact the RUP project has had on the total number of searches. This was done in two ways. Searches conducted for target schools were compared with searches conducted for non-target schools, and the number of searches before the Research Utilization Project entered was compared with the number of searches after the RUP entered the schools. The impact of the RUP, as shown by these two indicators, was indeed great.

Another objective of this study, a determination of principals' satisfaction with RUP products and services, resulted in two divergent findings. Whereas <u>all</u> principals gave the RUP the highest or a high rating for those who had used it, principals' ratings of the RUP in their schools overall was considerably lower. This would point to the fact that those principals and teachers who had used the RUP found it very helpful, but that there was not enough awareness of the project in the schools.

Measures intended to gauge principals' attitudes toward the Research Utilization Project showed that fifteen out of sixteen liked the Project and held favorable attitudes toward it. No principal disliked the Project.

Closely related to principals' satisfaction is their opinion regarding expansion of the program, both within the target schools and to the entire school system. The majority of the principals favored expansion of the project; twelve out of sixteen favored expansion of the

program within their own schools, and fourteen out of sixteen were in favor of expansion to the whole school system. This overwhelming vote in favor of expansion underlines the need for greater awareness cited above.

Less frequent use of materials placed in target schools, such as RIE and CIJE Indexes and PREP Kits, than of RUP services generally is probably due to the fact that the extension agents (linkers) appeared at regular intervals at the schools to remind the staff of the availability of their services.

One of the most important aspects of this evaluation was determining the utilization of information in the form of new projects, programs, or teaching techniques initiated or developed as a result of the Research Utilization Project. The majority of the principals reported that the RUP was responsible for some new projects; only two principals attributed no new projects to RUP.

An investigation into a hypothesized direct relationship between principals' attitudes and number of searches conducted for their schools showed that no such relationship existed. This hypothesis was not supported, possibly because searches were conducted mainly for teachers and librarians, rather than for principals.

Conclusions

Data collected and anlyzed indicated that the Research Utilization Project was responsible for a large increase in the number of searches, both when target schools were compared with non-target schools and when target schools were compared with themselves during RUP and non-RUP time periods. These data support the hypothesis that a helping and interprofessional relationship, in this case exemplified by the educational extension agents (linkers), increases participation.

Data also indicated that fifteen out of sixteen principals held favorable attitudes toward the Research Utilization Project, as elicited by the attitudinal questions of the Principals' Attitude Rating Scale. The hypothesis that satisfaction is related to interpersonal involvement (in this case RUP) and is increased by a helping and interprofessional relationship (the linkers) is thus supported.

The direct relationship that was hypothesized to exist between amount of research information and services supplied to RUP target schools and RUP principals' attitudes toward the Project did not materialize. It must be assumed, therefore, that the number of searches conducted for the schools was independent of principals' attitudes toward the RUP. The data, then, do not support this hypothesis, perhaps due to the fact that the searches were conducted mainly for teachers and librarians, while the questions were asked of the principals.

Recommendations

This study affirms the problem stated by Lavin (1971) that a gap exists in the system of knowledge transfer, and that this gap causes or contributes to the lack of utilization of educational research. The project supports the finding of previous research in demonstrating the effectiveness of the personal contact rendered by the educational extension agent, as this contact led to a large increase in the number of searches and contributed to highly favorable attitudes on the part of the participating principals.

This project did bridge the gap between the central research resources and field personnel by utilizing the interpersonal linkage concept of the educational extension agent. It is, therefore, recommended that the extension agent concept serve as a model for the development of a system-wide information dissemination system.

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APPENDICES

APPENDIX A

RIC → RESEARCH INFORMATION CENTER

AFFILIATION: Departments of Research and Evaluation
Division of Planning, Research and Evaluation
Public Schools of the District of Columbia
Suite 1013, 415 Twelfth Street, N. W.
Washington, D. C. 20004
Telephone (202) 347-6727

HOURS: Open - 8:30 A.M. - 5:00 P.M. Monday-Friday
Closed - Saturdays, Sundays, and Holidays

ADMINISTRATION: Dr. Mildred P. Cooper, Assistant Superintendent
Departments of Research and Evaluation

Roger J. Fish, Coordinator
Research Information Center

PURPOSE: The Center was organized in 1969 to assist the professional staff of the District Schools in projects involving educational research. Research information is collected, stored, retrieved, and disseminated toward this objective.

USERS:
- Board of Education
- DCPS Teachers and Other Educational Personnel
- Central and Field Administration
- Federal and District Agencies
- Community Groups and Other Local Organizations

VISITORS: Visitors are welcome to use the information resources in the Center. The Center staff will locate and retrieve material for you. Assistance in the use of indexes and guides will be provided.

GUIDES AND RESOURCES: Card Catalog with author, title and subject entries. The Library of Congress Classification is used.

Periodical Catalog lists approximately 100 periodicals in the Center.

Vertical File contains documents and materials on a wide variety of educational subjects.

Current Index to Journals in Education (CIJE) is a comprehensive author and subject guide to articles in the field of education. CIJE indexes over 500 educational journals each month with annotations and is cumulated annually and semiannually.

Research in Education (RIE) is a monthly abstracting service of the Educational Resources Information Center (ERIC). RIE is an author-subject-institution index to documents pertaining to educational research. These indexes and microfiche copies of the documents are maintained in the Center. Readers and reader-printers are available for viewing of documents.

PREP: PREP (Putting Research into Educational Practice) is a cooperative service offered by the Office of Education to State Departments of Education. PREP pulls together the best thinking of researchers on specific educational topics and expresses their findings in nontechnical language. The Research Information Center reproduces and distributes summary copies on request. Full reports are available on loan. PREP is also included in RIE and is available on microfiche.

HISTORICAL DOCUMENTS: Some historical and archival materials on the D. C. Public School System is available for use in the Center by visitors. These include reports of the Superintendents and Board of Trustees from 1845 through 1932.

EDUCATIONAL RESEARCH SERVICE: Through a subscription to the Educational Research Service (ERS) of the NEA and the AASA, the Center has direct access to an extensive source of current information and research on education not readily available elsewhere. Indexes to ERS publications are available for use.

NEWSCLIPPINGS: A file of clippings of local newspapers is maintained in the Center. Articles are filed by subject matter. An index is available for reference. Clippings are also posted as a current awareness activity of the Center.

STATISTICAL REPORTS: Current and historical published statistical reports of the school system are available on pupils, personnel and buildings.

BUDGET AND FINANCIAL MATERIALS: Also available for reference is selected published information on Federal, state, and city school finances, as well as D. C. School budgets.

AVAILABILITY OF SERVICES: Potential clients of Center services may be grouped as follows:
Category I: This includes individuals or groups involved in direct support of school system programs. Computer and other services are available on a priority basis to these individuals.
Category II: Other users, such as community groups, Federal, District, or other local agencies or organizations, are given services in accord with the nature and purpose of their request in terms of school system operational priorities. These requests must be submitted in writing to the Assistant Superintendent, Departments of Research and Evaluation.
Category III: Employees of the school system and other students doing graduate or undergraduate work or involved in other projects are welcome to use Center facilities, as are those in categories I and II. Computer services will be provided only upon approved written request to the Assistant Superintendent, Departments of Research and Evaluation. This letter should indicate the purpose of the request and a statement indicating how such a search will directly benefit the school system. Execution of such a search request will follow approval of the written request. Center staff will be happy to provide information on the availability of computer searches on a fee basis from outside sources upon request.

APPENDIX B

READING RESEARCH UTILIZATION PROJECT --
an RIC project for Teachers and other Field Personnel,
Washington, D.C.

The Reading Research Utilization Project was funded in Washington, D.C. in July, 1971. In direct support of D.C. Public School system objectives to raise reading achievement of the pupils, the Departments of Research and Evaluation, through the Research Information Center, extend special research information services to 16 elementary schools on an experimental basis. Emphasis in this project is on reading. To effect the link between resources and practitioner, two Educational Extension Agents (EEA's) are working through target school librarians to supplement local school information resources and services available to each school's Reading Mobilization Team and other key instructional personnel charged with the responsibility for improvement of reading achievement. A third Extension Agent will be active in providing information services to the Teacher Center, a special project in educational renewal funded by the U.S. Office of Education.

EEA's currently provide the following services:

1. Assist the client in question negotiation or problem statement.
2. Perform manual and computer searches of ERIC and non-ERIC materials for information or solutions to problems.
3. Screen, analyze, and synthesize retrieved information for user and display alternatives to user.
4. Coordinate with target school librarians to provide supplemental information resources and services.
5. Assist target school librarians in instructing interested field personnel in how to use ERIC and how to conduct ERIC searches.
6. Provide research information for proposal writing.
7. Provide opportunities for dissemination of innovative educational practices.
8. Provide a liaison between instructional personnel and area universities, libraries, the Office of Education, and the Division of Planning, Research and Evaluation.

A special orientation and training program for target school librarians was carried out jointly by the D. C. Schools Research Information Center and the State of Pennsylvania's Research and Information Service for Education (RISE). Librarians were trained in basic negotiation and retrieval skills and are expected to be able to provide the following services in their schools:

1. Assist teachers in question negotiation or problem statement by properly completing a search request form including the selection of appropriate ERIC descriptors.
2. Instruct interested local instructional personnel in the use of ERIC resource tools made available to the school libraries through RUP so that these personnel will be able to perform simple manual searches.
3. Transmit completed search forms to the Educational Extension Agent for execution of manual and/or computer searches.

RJF 5/72

APPENDIX C

TARGET SCHOOLS
READING RESEARCH UTILIZATION PROJECT

Bancroft Elementary School
18th and Newton Sts., NW
Washington, D. C. 20010

Beers Elementary School
Alabama Ave. & 36th Place, SE
Washington, D. C. 20020

Blow-Pierce Elementary School
19th and Benning Road, NE
Washington, D. C. 20002

Bruce Elementary School
Kenyon St. & Sherman Ave., N.W.
Washington, D. C. 20010

Bunker Hill Elementary School
14th and Michigan Ave., NE
Washington, D. C. 20018

Cleveland Elementary School
8th and T Streets, NW
Washington, D. C. 20001

Davis Elementary School
44th and H Streets, SE
Washington, D. C. 20019

Hendley Elementary School
6th and Chesapeake Sts., SE
Washington, D. C. 20032

Lafayette Elementary School
Northampton and Broad Br. Rd., NW
Washington, D. C. 20015

McGogney Elementary School
Wheeler Rd. & Mississippi Ave., SE
Washington, D. C. 20012

Meyer Elementary School
11th and Clifton Sts., N.W.
Washington, D. C. 20009

Miner Elementary School
615 - 15th Street, NE
Washington, D. C. 20002

Noyes Elementary School
10th and Franklin Sts., NE
Washington, D. C. 20018

Petworth Elementary School
8th and Shepherd Sts., NW
Washington, D. C. 20011

Stoddert Elementary School
39th and Calvert Sts., NW
Washington, D. C. 20007

Walker-Jones Elementary School
1st and L Streets, NW
Washington, D. C. 20001

APPENDIX D

RESEARCH INFORMATION CENTER
DIVISION OF PLANNING, RESEARCH AND EVALUATION
PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA
415 12TH STREET, N.W. WASHINGTON, D.C. 20004

SEARCH NUMBER
M
_____D

A. CLIENT INFORMATION:

NAME:_____
TITLE:_____
AFFILIATION:_____
ADDRESS:_____
_____
TELEPHONE:_____

B. CONTACT METHOD:

TELEPHONE REQUEST _____
VISIT _____
IN-HOUSE _____
LETTER _____
OTHER_____
REFERRED BY_____

C. PURPOSE OF INFORMATION SEARCH:

CLASSROOM USE _____
ADMINISTRATION _____
PROFESSIONAL DEVELOPMENT _____
PROPOSAL PREPARATION _____
CURRICULUM DEVELOPMENT _____
OTHER (Specify)_____

D. SERVICE METHOD:

TELEPHONE _____
PICK-UP _____
PERSONAL DELIVERY _____
REGULAR MAIL _____
INTERSCHOOL MAIL _____
EXTENSION AGENT _____

E. STATEMENT OF PROBLEM:

_____
_____
_____
_____

IN-HOUSE INFORMATION:

NEGOTIATED BY:_____ SEARCHER:_____
DATE NEGOTIATED:_____ DATE STARTED:_____
DATE NEEDED:_____ DATE COMPLETED:_____

RESOURCES USED:

ERIC ___ PREP ___ NEA ___ GRF ___ CIJE ___ S&T ___ OTHER_____

SEARCH RESULTS:_____
_____
_____
_____

Form Revised 8/72

SEARCH STATEMENT: _____

_____

CONCEPT 1: _____

SET NUMBER & TOTAL: _____ / _____

CONCEPT 2: _____

SET NUMBER & TOTAL: _____ / _____

CONCEPT 3: _____

SET NUMBER & TOTAL: _____ / _____

NOTES: _____

TIME:

NEGOTIATION _____

SEARCH _____

TOTAL _____

NUMBER OF HITS _____

PRINTS/FORMAT _____

APPENDIX E

Principals' Attitude Rating Scale

You will remember that before the Reading Research Utilization Project got underway, an orientation session was provided to you and some of your staff members. This orientation included background in-information on the Reading Research Utilization Project, on ERIC, and on the Research Information Center. Below are some questions regarding this project. Kindly check the answer that best expresses your views.

1. Have you availed yourself of the services offered by the RUP Project?

   Yes_____ (2) No_____ (1)

2. Do you like the Program?

   Yes_____ (2) No_____ (1)

3. If you liked the Program, do you find it

   very helpful (4) helpful (3) slightly helpful (2) not helpful at all (1)

4. How do you think your teachers feel about the Project?

   very favorable (4) favorable (3) neutral (2) unfavorable (1)

5. What is your librarian's reaction to the Project? Does she find it

   very helpful (4) helpful (3) slightly helpful (2) not helpful at all (1)

6. Do your teachers use the system?

   a lot (4) some (3) very little (2) not at all (1)

7. Does your librarian use the system?

   a lot (4) some (3) very little (2) not at all (1)

APPENDIX E (continued)

8. Are you satisfied with the services of the extension agent?

very satisfied (4) satisfied (3) slightly dissatisfied (2) very dissatisfied (1)

9. How many time have you used the services offered by the Reading Research Utilization Project?

0 (1) 1-5 (2) 6-10 (3) more than 10 (4)

10. What percent of your staff use the project services?

None (1) up to 25% (2) 26-50% (3) over 50% (4)

11. How would you rate this program in your school for those who used it?

very helpful (4) helpful (3) not very helpful (2) not helpful at all (1)

12. How would you rate this program in your school overall?

very effective (4) effective (3) not very effective (2) not effective at all (1)

13. Do you feel the RUP Program should be expanded within your schoo.

Yes_____ (2) No_____ (1)

14. Do you think the services of the RUP Program should be expanded to the rest of the school system?

Yes_____ (2) No_____ (1)

15. Have new projects, programs, or teaching techniques resulted directly from the Reading Research Utilization Project?

Not at all (1) a few (2 or 3) (2) quite a few (4-6) (3) many (more than 6) (4)

16. Have you yourself used the materials (RIE & CIJE Indexes & PREP Kits) that have been placed in your school?

Yes_____ (2) No_____ (1)

17. If you have used the material, how valuable have your found it?

very valuable (4) valuable (3) not very valuable (2) worthless (1)

18. In talking to other principals, librarians, or teachers, how would you recommend the program?

strongly recommend (4) recommend (3) feel neutral (2) would not recommend (1)

APPENDIX F

PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA
DIVISION OF PLANNING, INNOVATION AND RESEARCH
PRESIDENTIAL BUILDING
415 - 12TH STREET, N. W.
WASHINGTON, D. C. 20004

November , 1972

Dear

As you know, the Research Utilization Project, a school research information service, has been offered to your school during the past year. A description of the project and the services which have been available to you and your staff is enclosed.

Mr. Roger Fish and Mrs. Erika Robinson of the Research Information Center, a part of the Division of Planning, Research and Evaluation, would like to interview you regarding this project. Your suggestions and comments will help us to improve our services to your school and aid in project evaluation.

Your cooperation and assistance to them in this effort will be greatly appreciated. Approximately one hour of your time will be needed for the actual interview. For your convenience, several suggested dates and times are shown below. Would you please have your secretary call Mrs. Robinson in the Research Information Center at 347-6727 indicating your preference. We are hoping that there will be a continuation of U.S. Office Education funding that will enable us to provide information services to you for the second semester. Again we wish to thank you for your cooperation.

Sincerely yours,

Mildred P. Cooper
Assistant Superintendent
for Research and Evaluation

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APPENDIX G

Code Book

Column	Card	Item #	Variables	Code	Range
1	1	Q1	Use of services	1=No 2=Yes 9=Missing data	1-2,9
2	1	Q2	Liking of Program	1=No 2=Yes	1-2
3	1	Q3	Helpfulness of program	1=Not helpful at all 2=Slightly helpful 3=Helpful 4=Very helpful	1-4
4	1	Q4	Teachers' feelings about Project	1=Unfavorable 2=Neutral 3=Favorable 4=Very favorable	1-4
5	1	Q5	Librarians' reaction to Project	1=Not helpful at all 2=Slightly helpful 3=Helpful 4=Very helpful	1-4
6	1	Q6	Teachers' Use of System	1=Not at all 2=Very little 3=Some 4=A lot	1-4
7	1	Q7	Librarians' Use of System	1=Not at all 2=Very little 3=Some 4=A lot	1-4
8	1	Q8	Satisfaction with services of extension agent	1=Very dissatisfied 2=Slightly dissatisfied 3=Satisfied 4=Very satisfied	1-4
9	1	Q9	Principal's use of Project	1=0 times 2=1-5 times 3=6-10 times 4=More than 10 times	1-4
10	1	Q10	% of staff using services	1=None 2=Up to 25% 3=26-50% 4=over 50%	1-4
11	1	Q11	Helpfulness of program in school for users	1=Not helpful at all 2=Not very helpful 3=Helpful 4=Very helpful	1-4
12	1	Q12	Rating of program in school overall	1=Not effective at all 2=Not very effective 3=Effective 4=Very effective	1-4
13	1	Q13	Expansion of program within school	1=No 2=Yes	1-2

APPENDIX G (continued)

Column	Card	Item #	Variables	Code	Range
14	1	Q14	Expansion of Program to rest of school system	1=No 2=Yes	1-2
15	1	Q15	Number of new Projects resulting from RUP	1=None at all 2=A few (2 or 3) 3=Quite a few (4-6) 4=Many (more than 6)	1-4
16	1	Q16	Use of RIE & CIJE & PREP materials by principal	1=No 2=Yes	1-2
17	1	Q17	Value of material to principal	1=Worthless 2=Not very valuable 3=Valuable 4=Very Valuable	1-4
18	1	Q18	Recommendation of program to others	1=Would not recommend 2=Feel neutral 3=Recommend 4=Strongly recommend	1-4
19-20	1	1-18	Total of responses to items 1-18		21-58
21-22	1	Operational	Searches for Jan. 1972	00=None 01=1 02=2 etc., each number representing the number of searches for each school for each month	
23-24	1	Hypothesis No. 1	Searches for Feb. 1972		
25-26	1	"	Searches for Mar. 1972		
27-28	1	"	Searches for Apr. 1972		
29-30	1	"	Searches for May 1972		
31-32	1	"	Searches for June 1972		00-15
33-34	1	"	Total # of Searches Jan-June 1972		00-29
55	1	Operational	Searches for March 1971	Number	0-1
56	1	Hypothesis	Searches for Apr. 1971	represents	
57	1	No. 3	Searches for May 1971	Number of Searches	
58	1	"	Searches for June 1971	per School	
59	1	"	Total # of Searches March-June 1971		0-1

APPENDIX G (continued)

Column	Card	Item #	Variables	Code	Range
60-61	1	Operational	Searches for March 1972	Number	00-09
62-63	1	Hypothesis	Searches for Apr. 1972	represents	
64-65		No. 3	Searches for May 1972	Number of	
66-67			Searches for June 1972	Searches	
68-69			Total # of Searches March-June 1972	per School	00-25

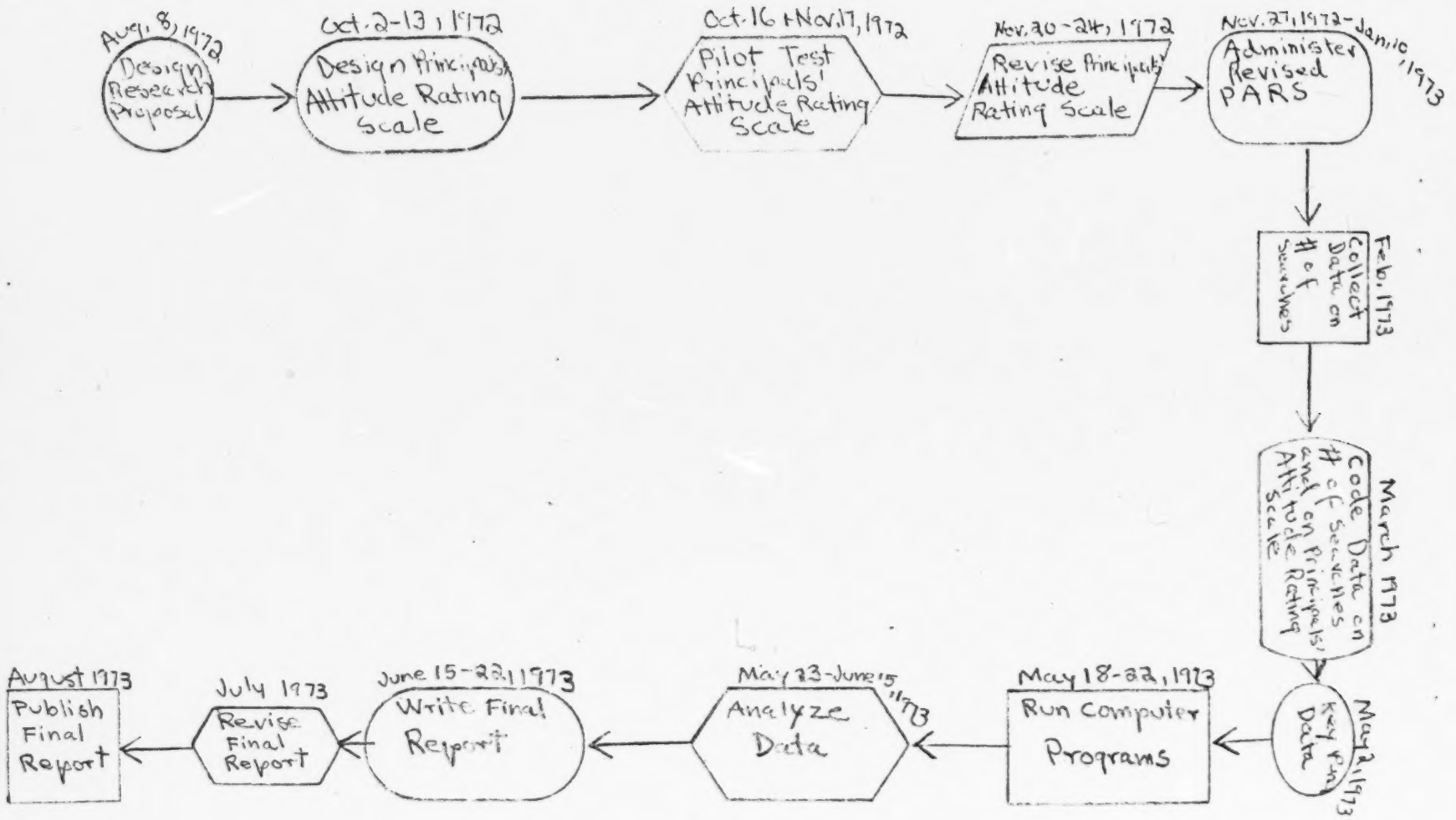
APPENDIX G (Continued)

Column	Card	Variables	Code	Range
75	1	Target or Non-Target School	1=Target 2=Non-target	1-2
76	1	Sex	1=Male 2=Female 9=Missing Data	1-2,9
77	1	Race	1=Black 2=White 9=Missing Data	1-2,9
78	1	Status	1=Active 2=Retired 3=Resigned 4=Acting for principal 9=Missing Data	1-4,9
79-80	1	ID# of School	01=Bancroft	01-32
	1		02=Beers	
	1		03=Blow	
	1		04=Bruce	
	1		05=Bunker Hill	
	1		06=Cleveland	
	1		07=Davis	
	1		08=Hendley	
	1		09=Lafayette	
	1		10=McGogney	
	1		11=Meyer	
	1		12=Miner	
	1		13=Noyes	
	1		14=Petworth	
	1		15=Stoddert	
	1		16=Walker-Jones	
	1		17=Aiton	
	1		18=Buchanan	
	1		19=Gage	
	1		20=Garfield	
	1		21=Hardy	
	1		22=Harrison	
	1		23=Leckie	
	1		24=Merritt	
	2		25=Murch	
	2		26=Powell & Annex	
	2		27=Syphax	
	2		28=Tubman	
	2		29=Watkins	
	2		30=Webb	
	2		31=West	
	2		32= J.O. Wilson	

APPENDIX G (continued)

Column	Card	Item	Variables	Code	Range
33	3	Operational	Year of Search	1=1971 2=1972	1-2
34-36	3	Hypothesis	January		
37-39	3	No. 2	February	Number represents number of searches conducted	000-760
40-42	3	"	March		
43-45	3	"	April		
46-48	3	"	May		
49-51	3	"	June		
52-54	3	"	Total for 6 months		

APPENDIX H


Aug. 8, 1972
Design Research Proposal
Oct. 2-13, 1972
Design Principals' Attitude Rating Scale
Oct. 16 - Nov. 17, 1972
Pilot Test Principals' Attitude Rating Scale
Nov. 20-24, 1972
Revise Principals' Attitude Rating Scale
Nov. 27, 1972 - Jan. 10, 1973
Administer Revised PARS
Feb. 1973
Collect Data on # of Semesters
March 1973
Code Data on # of Semesters and on Principals' Attitude Rating Scale
May 2, 1973
Key Punch Data
May 18-22, 1973
Run Computer Programs
May 23-June 15, 1973
Analyze Data
June 15-22, 1973
Write Final Report
July 1973
Revise Final Report
August 1973
Publish Final Report